

REMARKS

The Applicants request reconsideration of the rejection.

Claims 58-70 are now pending, including new dependent claims 63-70.

Claims 58-59 stand rejected under 35 U.S.C. §102(b) as being anticipated by Sonobe et al., U.S. Patent No. 6,054,716 (Sonobe). The Applicants respectfully traverse as follows.

Claim 58 has been amended to emphasize certain patentable features of the invention. In particular, claim 58 now recites that the back side of the tab is exposed from a mounting surface of the seal member, which distinguishes the LED device of Sonoboe. Note Fig. 1(a) of Sonobe which shows a recess portion 11 of a first lead 1 (asserted as the claimed tab) entirely potted by the resin package 6, such that the back side of the first resin portion 11 is not exposed from the resin package 6.

In addition, claim 58 recites tab suspension leads that are contiguous to the tab. Against this feature, the rejection cites a second lead 2 as well as the extension of first lead 1, but second lead 2 is not contiguous to the recess portion 11 of first lead 1. Indeed, second lead 2 cannot be contiguous to the recess portion 11, or else the LED would be short-circuited and fail to function. Accordingly, Sonobe does not disclose plural tab suspension leads contiguous to the recess portion 11 of first lead 1.

Claim 58 (as amended) also recites a plurality of leads disposed around and apart from the tab, whose back sides are exposed from the mounting surface of the seal member. By this amendment, the claimed plurality of leads are further distinguished from first lead 1 and second lead 2 of Sonobe, which are not both disposed around and apart from the recess portion 11 of first lead 1.0. In fact, first

lead 1 could not be apart from recess portion 11 , or else the LED would fail to function.

Moreover, claim 58 has been amended to recite that the tab has first side surfaces formed under the semiconductor chip and second side surfaces opposed to the first side surfaces, each second side surface being formed between the semiconductor chip and the wire connection areas on the surface of the tab opposite to the back side thereof. Sonobe has no corresponding surfaces to the claimed first side surfaces and second side surfaces opposed to the first side surfaces. Indeed, the rejection asserts Fig. 1(a) generally as disclosing the previously claimed “first sides” and “second sides”, but the recess portion 11 of first lead 1 does not appear to have any such opposing side surfaces. However, for greater precision and clarity, claim 58 has been amended to recite the first and second side surfaces, wherein each second side surface is formed between the semiconductor chip and the wire connection areas.

For each of the above reasons, amended claim 58 is patentably distinguishable from Sonobe. Accordingly, the Applicants request reconsideration and withdrawal of the rejection.

Dependent claim 59 inherits all of the patentable features of independent claim 58, from which it is derived, and is thus patentable as well. Accordingly, no argument for the separate patentability of claim 59 will be made at this time.

Claims 60-62 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Sonobe in view of Uemura, U.S. Patent No. 6,310,364 (Uemura). Of note is the rejection of claim 61, the Office Action asserting that although Sonobe’s recess portion 11 is circular, the “changes in shape of the product” is obvious to the person

of ordinary skill in the art (citing In re Dailey and Eilers, 149 USPQ 47 (CCPA1966), and Glue Co. v. Upton, 97 US 3 (1878)). Respectfully, however, the citation to these cases is misplaced.

Claim 61 recites that the tab is quadrangular, which is distinguished from Sonobe's circular recess portion 11. Because no prior art reference having a quadrangular tab corresponding to the claimed tab was developed by the Examiner's search, no *prima facie* case of unpatentability based on the prior art is made out. For this reason, the Examiner cites Dailey, but at most, Dailey suggests that a *prima facie* case of obviousness may be suggested when the particular configuration is not "anything more than one of numerous configurations a person of ordinary skill in the art would find obvious." Dailey at page 50. Because the Office Action does not explain why the circular shape of Sonobe's recess portion 11 and the quadrangular shape of claim 61 are two of "numerous configurations a person of ordinary skill in the art would find obvious," the rejection is merely conclusory and does not, in fact, establish a *prima facie* case of unpatentability.

Further, claim 61 recites that the first side surfaces and second side surfaces are formed selectively in a mutually independent manner along sides of the quadrangle. These limitations are not addressed in the Office Action. Therefore, claim 61 is patentable over the combination of Sonobe and Uemura.

Dependent claim 62 recites that a width of the surface of the tab is larger than a width of the back side of the tab. Apparently, the Office Action equates this limitation also with a change in shape of the product. However, setting the width of the surface of the tab larger than the width of the back side of the tab gives the advantage that the tab is more securely buried in the resin, thus making it difficult for

the tab to peel off from the package. In addition, no lug is formed on the tab surface, making it possible to reduce the overall size of the package. Thus, claim 62 is separately patentable.

Because dependent claim 60 is derived from claim 58, claim 60 inherits the patentable features of claim 58 and is thus patentable as well. Accordingly, no argument for the separate patentability of claim 60 will be made at this time.

New claims 63-70 are also patentable, at least in that they inherit that patentable features of claim 58. In addition, claim 63 is separately patentable in reciting a plurality of grooves formed in the tab, wherein the first and second side surfaces are inner surfaces of the plurality of grooves. Further, claim 64 recites the semiconductor device as a surface mounting device; claim 65 recites that the back side of the tab and the back sides of the leads are in the same plane; claim 66 requires each of the tab suspension leads to be disposed between two adjacent leads of the plurality of leads; and claim 67 requires the semiconductor device to be a Quad Flat Non-leaded type device. Each of these claims is thus distinguishable from Sonobe, even if taken in combination with Uemura or any other reference of record.

Dependent claim 68 requires the tab to have an inverse trapezoidal shape, which provides sharp edges to enhance the “bite” of the tab ends in the resin, making it difficult for the tab to peel off from the package. In claim 69, by requiring the distance between the exposed end of the tab and the inner end of each lead to be larger than the distance between the tip of the tab surface and the inner end of each lead, there is a greater degree of margin against short-circuit between the tab and the leads. Accordingly, claims 68 and 69 have separate patentability.

Dependent claim 70 is also separately patentable in requiring grooves in the plurality of leads, beneath and in contact with the insulating resin of the seal member. By these grooves, the area of contact with the resin is larger than in the prior art, making it difficult for the leads to peel off from the resin.

In view of the foregoing amendments and remarks, the Applicants request reconsideration of the rejection and allowance of the claims.

To the extent necessary, the Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Mattingly, Stanger, Malur & Brundidge, P.C., Deposit Account No. 50-1417 (referencing attorney docket no. H-1019-02).

Respectfully submitted,

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.

/Daniel J. Stanger/
Daniel J. Stanger
Registration No. 32,846

DJS/sdb
(703) 684-1120